COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Fredericksburg Satellite Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Keller Manufacturing Company, Inc.
Culpeper County, Virginia
Permit No. FSO40170

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Keller Manufacturing Company, Inc. has applied for a Title V Operating Permit for its wood furniture manufacturing facility located in Culpeper County, Virginia. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date: May 15, 2001

Air Permit Manager:_____ Date:_____

Regional Permit Manager:_____ Date:_____

FACILITY INFORMATION

Permittee
Keller Manufacturing Company, Inc.
P.O. Box 280
Culpeper, Virginia 22701

Facility
Keller Manufacturing Company, Inc.
601 Germanna Highway
Culpeper, Virginia 22701

AIRS ID No. **51-047-0008**

SOURCE DESCRIPTION

SIC Code: 2511 - Manufacture of solid wood dining and bedroom furniture

Keller Manufacturing Company, Inc. ("Keller") manufactures solid wood dining and bedroom furniture at its Culpeper, Virginia facility. Wood received at the facility is first graded and stacked on rail carts which are loaded into one to four drying kilns. A wood-fired (hand-fed coal as a supplementary fuel when needed) boiler with a maximum rated input heat capacity of 47.8 million Btu/hr is utilized to supply up to 30,000 pounds of steam per hour to the kilns. After kiln drying, the wood is placed and stored in the "Tempering Room" until ready for production. To manufacture a piece of furniture, the dried and tempered wood goes through many woodworking operations such as planing, cutting, trimming, molding, turning and sanding. In the furniture assembly, gluing operations are performed. Finishing operations constitute the remaining operation in the manufacturing process. Almost all pieces will consist of a stain, a sealer, glaze and topcoat, applied in spray booths.

Scrap wood from the manufacturing steps is sent to a "wood hog" which processes the wood suitable for use in the boiler. The dust from the wood hog cyclone as well as dust from the woodworking operations are collected by four baghouses and stored as fuel for the boiler.

The facility is a Title V major source of volatile organic compound emissions and hazardous air pollutants. This source is located in an attainment area for all pollutants, and is a PSD minor source. One of the facility's spray booths is permitted under a minor NSR Permit issued on June 24, 1999 (Attachment 1). The remainder of the facility's construction predates the applicability of the new and modified source minor permitting requirements. The facility is subject to 40 CFR 63, Subpart JJ - National Emission Standards for Wood Furniture Manufacturing Operations (Wood Furniture Manufacturing MACT), as an existing source.

COMPLIANCE STATUS

The facility is inspected once per calendar year. The most recent inspection occurred on August 22, 2000. Based on the inspection, the DEQ determined the facility to be in compliance with the applicable requirements, including the Wood Furniture Manufacturing MACT.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The significant emission units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment Subject to 9 VAC 5 Chapter 40 (Existing Sources)							
21	21	Keeler Class CP Model # 14421 wood/coal-fired boiler (1966)	47.8 x 10^6 Btu/hr (heat input)	Zurn multiclone cyclone with flyash reinjection (1966)	PCD-21	Particulate Matter	None
Woodworking Equipment Subject to 9 VAC 5 Chapter 40 (Existing Sources)							
17	17	Woodworking operations (1966)	50,264 CFM	Pneumafil Model 13.5-460-10 Baghouse #4	PCD-17	Particulate Matter	None
18	18	Woodworking operations (1966)	50,264 CFM	Pneumafil Model 13.5-460-10 Baghouse #3	PCD-18	Particulate Matter	None
19	19	Woodworking operations (1966)	23,000 CFM	Pneumafil Model 13.5-460-10 Baghouse #2	PCD-19	Particulate Matter	None
20	20	Woodworking operations (1966)	23,000 CFM	Pneumafil Model 13.5-460-10 Baghouse #1	PCD-20	Particulate Matter	None
Furniture Finishing Equipment Subject to 9 VAC 5 Chapter 40 (Existing Sources) and 40 CFR 63 Subpart JJ (Existing Sources)							
1	1	Chair line stain booth No. 1 (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-1	Particulate Matter	None
2	2	Chair line stain booth No. 2 (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-2	Particulate Matter	None

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
3	3	Chair line sealer booth (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-3	Particulate Matter	None
4	4	Chair line glaze booth (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-4	Particulate Matter	None
5	5	Chair line topcoat booth No. 1 (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-5	Particulate Matter	None
6	6	Chair line topcoat booth No. 2 (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-6	Particulate Matter	None
7	7	Chair line topcoat booth No. 3 (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-7	Particulate Matter	None
8	8	Chair line utility booth (1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-8	Particulate Matter	None
9	9	Case & table stain booth No. 1 (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-9	Particulate Matter	None
10	10	Case & table stain booth No. 2 (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-10	Particulate Matter	None
12	12	Case & table sealer booth No. 2 (1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-12	Particulate Matter	None
13	13	Case & table glaze booth (DeVilbiss 1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-13	Particulate Matter	None

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
14	14	Case & table topcoat booth No. 1 (1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-14	Particulate Matter	None
15	15	Case & table topcoat booth No. 2 (1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-15	Particulate Matter	None
16	16	Sandroom spray booth (1966)	7.5 gallons/hr	Replacement fiberglass filters	PCD-16	Particulate Matter	None
Furniture Finishing Equipment Subject to 9 VAC 5 Chapter 50 (New/Modified Sources) and 40 CFR 63, Subpart JJ (Existing Sources)							
11	11	Case & table sealer booth No. 1 (1987)	7.5 gallons/hr	Replacement fiberglass filters	PCD-11	Particulate Matter	None
Furniture Gluing Operations Subject to 9 VAC 5 Chapter 40 (Existing Sources) and 40 CFR 63, Subpart JJ (Existing Sources)							
G-1	-	Gluing operations	-	None	-	-	None

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

EMISSIONS INVENTORY

A copy of Keller's calendar year 1999 emission statement is attached as Attachment 2. The criteria pollutant and hazardous air pollutant emissions from this emission statement are summarized in the following tables.

CY 1999 Annual Criteria Pollutant Emissions (tons/yr)					
Unit ID No.	PM/PM_{10}	NO_x	CO	VOCs	SO_2
1 - 16	0.0	0.0	0.0	55.4	0.0
17 - 20	0.1	0.0	0.0	0.0	0.0
21	1.2	5.9	8.4	2.9	0.3
Total	1.3	5.9	8.4	58.3	0.3

CY 1999 Annual Hazardous Air Pollutant Emissions (tons/yr)					
Unit ID No.	Xylene	Methyl Isobutyl Ketone	Ethyl Benzene	Toluene	Total HAP
1 - 16	5.5	1.3	1.1	0.1	8.0
17 - 20	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0
Total	5.5	1.3	1.1	0.1	8.0

EMISSION UNIT APPLICABLE REQUIREMENTS - Wood-Fired Boiler [Unit ID # 21]

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-40-80. Standard for Visible Emissions (Existing Sources): Visible emissions from the boiler exhaust stack are limited to 20 percent opacity, except for one six-minute period in any one hour of not more than 60 percent opacity. Such opacity standards shall apply at all times except during periods of startup, shutdown and malfunction.

9 VAC 5-40-900. Standard for Particulate Matter (Existing Sources): Located in AQCR 4, the maximum allowable emission ratio, E (in pounds of particulate matter per million Btu heat input), is determined by the following expression:

$E = 1.0906H^{-0.2594}$, where H is the total capacity in millions of Btu per hour.

Since there is only one fuel burning equipment unit at this facility, H reduces to the maximum rated capacity of the boiler or 47.8. The maximum allowable emission ration, E, is thus equal to 0.4 pounds of particulate matter per million Btu per hour.

The maximum allowable particulate matter emissions (i.e., mass emission rate) for the boiler is

the product of the rated capacity (47.8 lb/million Btu) and E (as calculated above), or 47.8 x 0.4 = 19.12 pounds per hour. Uncontrolled particulate matter emissions from this boiler are calculated using the draft (9/99) AP-42 particulate emission factor (uncontrolled) of 0.39 lb/MMBtu. The hourly potential uncontrolled particulate matter is given by:

$(47.8 \times 10^6$ Btu/hr)*(0.39 lb/10^6 Btu) = 18.6 lb/hr.

To ensure compliance with the particulate matter standard, the facility uses a multicyclone. The manufacturer provides a rated particulate collection efficiency for the multicyclone of 92 percent, based upon a dust with not more than 10 percent less than 10 microns (i.e., PM_{10}) in size.

9 VAC 5-40-930. Standard for Sulfur Dioxide (Existing Sources): Limits the boiler exhaust discharge of sulfur dioxide into the atmosphere to no more than the following:

S = 2.64K

where

S = allowable emission of sulfur dioxide expressed in pounds per hour.
K = heat input at total capacity expressed in Btu x 10^6 per hour.

For Keller's wood-fired boiler, this equates to (2.64)(47.8) = 126.2 pounds per hour.

Monitoring and Recordkeeping

Monitoring and recordkeeping for the wood-fired boiler have been incorporated to meet 40 CFR Part 70 requirements. The quantity and quality of monitoring and recordkeeping required is believed to be sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with this permit. All records are required to be kept for the most recent five year period. They are listed below for each emission limitation, work practice and operational standard as may be applicable.

A. Visible Emissions: During an August 22, 2000 facility inspection, company personnel indicated that during normal boiler operation, there are no visible emissions from the boiler exhaust stack. The permit requires visible emission checks to be performed on the boiler exhaust stack on a daily basis when the boiler is in normal operation and during daylight hours. Such visible emission checks will be simple visual observations (EPA Method 22 - like procedures) of the exhaust gases for a minimum two minute period to determine if there is a presence of any visible emissions (does not include condensed water vapor/steam). If the presence of visible emissions is detected and the boiler and air pollution control equipment are functioning properly, the permittee shall conduct a Method 9 visible emission evaluation (VEE) for a six minute period. If the average opacity for that six minute period is greater than 20 percent (the standard) then a Method 9 VEE is required for a full hour to determine the compliance status of the boiler with the standard. Besides start-up and shutdown, the most likely cause for visible emissions is a malfunction of the boiler or the

ancillary or pollution control equipment. If a malfunction is suspected as the cause for visible emissions, the permittee is directed to take corrective action to eliminate the visible emissions. If corrective action still results in the boiler having any visible emissions, the permittee will conduct a six-minute Method 9 VEE each day until all visible emissions are eliminated. The permit requires maintaining records of all daily visible emission checks, all corrective actions taken and results of all Method 9 VEEs.

B. Particulate Matter (PM): The Keeler boiler is equipped with a Zurn multiple cyclone with flyash reinjection into the boiler. The multiple cyclone supplier (The Fly Ash Arrestor Corporation) has guaranteed 92 percent collection of total particulate matter, based upon a dust loading with not more than 10 percent of particulate matter less than ten microns in aerodynamic diameter (PM_{10}). Table 1.6-1 of the September 1999 Draft Ap-42, Section 1.6, *Wood Waste Combustion in Boilers*, indicates that up to 90 percent of the particles leaving a dry wood-fired boiler are PM_{10}. Consequently, there is no reasonable assurance that the multiply cyclone is achieving its stated design efficiency. For boilers similar to this Keeler boiler, this same AP-42 section provides a combined (i.e., filterable + condensable) particulate emission factor of 0.39 lb/MMBtu with an "B" (above average) emission factor quality rating. This emission factor is 98 percent of the PM standard for this boiler.

The boiler also has the capability to use bituminous coal as its fuel source at any time that coal is available. When coal is fired, it is "hand-fed" into the boiler. Table 1.1-4 of the September 1998 AP-42, Section 1.1, *Bituminous and Subbituminous Coal Combustion*, provides an uncontrolled particulate matter emission factor of 15 lb/ton. Assuming a coal higher heating value of 13,000 Btu per pound and a particulate matter control efficiency of 80 percent, coal combustion may be expected to result in the following particulate matter emissions:

[((47,800,000 Btu/hr)/(13,000 Btu/lb))/(2,000 lb/ton)] * (15 lb/ton) * (1-0.80) = 5.5 lb/hr.

Since it is not clear what the actual margin of compliance with the particulate matter standard exists with the Keeler boiler firing wood, the permit requires that a stack test be conducted within 120 days of permit issuance. The permit states that the permittee shall use the unit-specific emission factor developed during the stack test for future emission calculations required by the permit. The permit also alerts the permittee that additional tests may need to be conducted at most every two years. Once the DEQ reviews the results of the initial stack test, the need for additional stack tests will then be evaluated.

To provide more frequent checks on the effectiveness on the multicyclone, the permit requires that a monitoring device be installed to measure and indicate either airflow or static pressure drop across the multicyclone. At a given boiler operating load, the pressure drop (air flow to a lesser degree) is dependent almost exclusively on the physical condition of the collector. This fact can be used to evaluate mechanical problems within the multicyclone of the collector. The permit also requires annual inspections to determine structural integrity of the pollution control device. Recordkeeping of these two provisions is also included.

C. Sulfur dioxide: With an emission factor of 0.15 lb/ton, the potential sulfur dioxide emissions from the boiler burning wood is given by:

[((47.8 x 10^6 Btu/hr)/(8,000 Btu/pound))/(2000 lb/ton)] * (0.15 lb/ton) = 0.5 lb/hr.

Since this is less than one-half of one percent of the standard, there is no monitoring necessary for compliance with the sulfur dioxide standard when burning wood.

On the contrary, the potential of sulfur dioxide emissions when burning coal, with a sulfur content of 2.4 weight percent, is given by the following:

[((47,800,000 Btu/hr)/(13,000 Btu/lb))] * (2.4/100) * 2 = 176.5 lb/hr, assuming all the sulfur is converted to sulfur dioxide and no sulfur is retained in the ash.

Using the AP-42 emission factor of 31S results in potential emissions of 136.8 lbs per hour. Since this potential is greater than the sulfur dioxide standard, the permit requires hourly records of coal feed, sulfur content and calculated sulfur dioxide emissions whenever coal is fed to the boiler. The permittee is also required to obtain a certification from the fuel supplier for each shipment of coal received at the facility that indicates the sulfur content of the coal.

Testing

The permit requires an initial stack test on the Keeler Boiler [ID #21] for particulate matter. For this testing and other testing that may be performed to determine compliance with the permit limitations, a table of test methods has been included in the permit. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

Other than reporting of the stack test results covered in the Testing section, no specific reporting has been included for the fuel burning equipment.

Streamlined Requirements

There are no streamlined requirements proposed.

EMISSION UNIT APPLICABLE REQUIREMENTS - Woodworking Equipment [Unit ID #'s 17, 18, 19, & 20]

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-40-2270. Standard for Particulate Matter:

A. Requires adequate duct work and properly designed collectors for the control of particulate matter emissions discharged to the atmosphere. The permit requires the facility to use fabric filter baghouses to control such particulate matter emissions from Unit ID #'s 17, 18, 19 and 20.

B. Limits particulate matter emissions to no more than 0.05 grains per standard cubic feet of exhaust gas

9 VAC 5-50-80. Standard for Visible Emissions (New/Modified Sources): Visible emissions from each pollution control device [PCD 17, 18, 19, and 20] exhaust are limited to 20 percent opacity, except for one six-minute period in any one hour of not more than 30 percent opacity. Such opacity standards shall apply at all times except during periods of startup, shutdown and malfunction. This standard (vs. the standard for existing sources) applies since there have been additional woodworking machines which were constructed at the facility on or after March 17, 1972.

9 VAC 5-50-90. Standard for Fugitive Dust/Emissions: Requires reasonable precautions to be taken to prevent particulate matter from becoming airborne during the operation phase of the woodworking equipment. The permit requires the reasonable precaution to take the form of enclosed transfer systems when transferring the collected material from the woodworking equipment collection devices (i.e., PCD 17, 18, 19 and 20). For the wood waste stockpiles, the permittee may choose the application of asphalt, oil, water or other suitable chemicals or enclosure as valid options for the control of fugitive dust.

Monitoring and Recordkeeping

Monitoring and recordkeeping for the woodworking equipment have been incorporated to meet 40 CFR Part 70 requirements. The quantity and quality of monitoring and recordkeeping required is believed to be sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with this permit. All records are required to be kept for the most recent five year period. They are listed below for each emission limitation, work practice and operational standard as may be applicable.

A. Particulate Matter (PM): The fabric filter baghouses employed on Unit ID #'s 17, 18, 19 and 20 are sufficient to meet the 0.05 grains per dry standard cubic feet emission limit provided that they are operated properly. To help ensure this, the permit requires the installation and maintenance of a device to continuously measure and indicate the differential pressure across each fabric filter baghouse. On a weekly basis and when the baghouse is in operation and venting to the atmosphere (during the winter months some of the baghouses are vented back into the building), the permittee is required to check the pressure readings and note all readings in a log. Any deficiencies noted during the inspection, shall be corrected, including replacement of all defective bags. The permittee is required to maintain records of these inspections including the values of the normal pressure drops across each

baghouse. The monitoring and recordkeeping required under visible emissions also provides adequate measures to check that the baghouses are operating properly and thus should meet the particulate limit.

B. Visible Emissions: Proper operation of the fabric filter baghouses (PCD 17, 18, 19, and 20) result in no visible emissions from the exhaust of these control devices. The permit requires visible emission checks to be performed on each of these control device exhausts on a daily basis when the woodworking equipment is in operation, the control device is venting to the atmosphere, and during daylight hours. Such visible emission checks will be simple visual observations (EPA Method 22 - like procedures) of the exhaust gases for a minimum two minute period to determine if there is a presence of any visible emissions (does not include condensed water vapor/steam). If the presence of visible emissions is detected and the air pollution control device is determined to be functioning properly, the permittee shall conduct a Method 9 visible emission evaluation (VEE) for a six minute period. If the average opacity for that six minute period is greater than 20 percent (the standard) then a Method 9 VEE is required for a full hour to determine the compliance status of the woodworking equipment with the standard. If a malfunction is suspected as the cause for visible emissions, the permittee is directed to take corrective action to eliminate the visible emissions. If corrective action still results in the equipment/pollution control device having any visible emissions, the permittee will conduct a six-minute Method 9 VEE each day until all visible emissions are eliminated. The permit requires maintaining records of all daily visible emission checks, all corrective actions taken and results of all Method 9 VEEs.

Testing

The permit does not require source tests for the woodworking equipment or exhausts from the associated pollution control equipment. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting has been included in the permit for the woodworking operations.

Streamlined Requirements

There are no streamlined requirements proposed.

EMISSION UNIT APPLICABLE REQUIREMENTS - Furniture Finishing Equipment (Unit ID #'s 1 - 16) - - (Additional Requirements Listed Under the "Facility Wide MACT Conditions" Section)

Limitations

There are sixteen spray booths installed at Keller. All sixteen spray booths, as well as the gluing operations (G-1) at the facility, commenced construction before December 6, 1994, the date EPA first proposed the Wood Furniture Manufacturing MACT. The applicable requirements for this MACT are discussed in the next section, Facility Wide MACT Conditions. All but one [ID #11] of the booths, was installed prior to 1972.

The following applicable process and operational limitations, that are unique to spray booth [ID #11], are from Conditions 4, 5, 6, 7 and 8 of the June 24, 1999, minor NSR permit. These limitations were set in the minor NSR permit for the purpose of satisfying state BACT requirements.

Condition 4: Limits volatile organic compound emissions to no more than fifteen tons per year, calculated monthly as the sum of the previous consecutive 12 months.

Condition 5: Requires the permittee to keep records necessary to determine emissions and compliance with permit. (See *Streamlined Requirements* Section below).

Condition 6: States that "*This facility is subject to 9 VAC 5-50-160 et. seq. (Rule 5-3), Toxic Pollutants, and this permit is subject to periodic review*". (See *Streamlined Requirements* Section below).

Condition 7: Requires that particulate matter emissions from the coating spray booth be controlled by filters.

Condition 8: Limits the visible emissions to no more than five percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed ten percent opacity.

The following Virginia Administrative Code(s) that have specific emission requirements have been determined to be applicable to spray booths [ID #'s 1-10 and 12-16]:

9 VAC 5-40-80. Standard for Visible Emissions (Existing Sources): Visible emissions are limited to 20 percent opacity, except for one six-minute period in any one hour of not more than 60 percent opacity. Such opacity standards shall apply at all times except during periods of startup, shutdown and malfunction. To provide reasonable assurance that the existing spray booths would be in compliance with the visible emission standard, the permit requires the operation and maintenance of filters on each spray booth.

Monitoring and Recordkeeping

Monitoring and recordkeeping for the furniture finishing equipment (i.e. the sixteen spray booths) have been incorporated to meet 40 CFR Part 70 requirements. The quantity and quality of monitoring and recordkeeping required is believed to be sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with this permit. All records are required to be kept for the most recent five year period. They are listed below for

each emission limitation, work practice and operational standard as may be applicable.

A. Volatile Organic Compound (VOC) Emissions: The permit requires recordkeeping of the monthly and annual coating material as well as the resulting VOC emission estimation for spray booth [ID #11]. This will provide adequate means of determining whether spray booth [ID #11] is operating within the permitted 15 tons per year VOC emission limitation.

B. Visible Emissions: A two part monitoring and recordkeeping scheme is required by the permit to provide reasonable assurance that each spray booth can operate in compliance with the respective opacity limits. First, Keller will be required to perform inspections of each spray booth filter each day that the spray booth is in operation. The purpose of the inspections is to examine the placement, integrity and particle loading of the filters.

   To validate the performance of the spray booth filter system on visible emissions, the permittee will be required to conduct weekly visible emission checks on each spray booth exhaust stack during normal operation at daylight hours. Such visible emission checks will be simple visual observations (EPA Method 22 - like procedures) of the exhaust gases for a minimum two minute period to determine if there is a presence of any visible emissions (does not include condensed water vapor/steam). If the presence of visible emissions is detected and the filter system is determined to be functioning properly, the permittee shall conduct a Method 9 visible emission evaluation (VEE) for a six minute period. If the average opacity for that six minute period is greater than the opacity limit for the particular booth exhaust evaluated, then a Method 9 VEE is required for a full hour to determine the compliance with the appropriate standard. If a malfunction is suspected as the cause for visible emissions, the permittee is directed to take corrective action to eliminate the visible emissions. If corrective action still results in the spray booth exhaust having any visible emissions, the permittee will conduct a six-minute Method 9 VEE each day during normal booth operation until all visible emissions are eliminated.

   Records of the spray booth filter inspections as well as weekly visible emission checks, which include all corrective actions taken, shall be maintained in accordance with the records retention requirement stated in the permit.

Testing

The permit does not require source tests for the spray booths. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting has been included in the permit for the spray booths based on the limitations, monitoring and recordkeeping listed in this section. However, the next section, Facility Wide MACT Conditions, contains the MACT specific and general reporting requirements

that affect the spray booths and the coatings used therein.

Streamlined Requirements

Condition 5 of the June 24, 1999, NSR permit was not included in the Title V permit since it is very generic. The condition reads:

"The permittee shall keep records as may be necessary to determine its emissions and compliance with this permit."

The recordkeeping requirements detailed in this section as well as in the following section, are more specific and effective in determining the emissions and compliance of the #11 spray booth.

Condition 6 of the June 24, 1999 NSR permit states a regulatory matter of fact but does not include any specific requirements (limitations, monitoring, etc.) affecting the #11 spray booth or the facility. However, the State-Only Enforceable Requirements section of the Title V Permit subsumes Condition 6 of the June 24, 1999 NSR permit.

Condition 8 of the June 24, 1999 NSR permit includes a standard for visible emissions for spray booth [ID #11] that is more stringent than the requirement of 9 VAC 5-50-80. Compliance with the NSR permit requirement will assure compliance with the subsumed requirement of 9 VAC 5-50-80. The regulatory citation of 9 VAC 5-50-80 has been included in the Title V permit.

EMISSION UNIT APPLICABLE REQUIREMENTS - Facility Wide MACT Conditions

Limitations

40 CFR 63, Subpart JJ. National Emission Standards for Wood Furniture Manufacturing Operations (Wood Furniture Manufacturing MACT): Keller is subject to this MACT. As such, all limitations contained in this MACT have been included in the permit. Additionally, Keller is subject to 40 CFR 63, Subpart A, General Provisions as enumerated in Table 1 to 40 CFR 63, Subpart JJ. A current (1999) copy of 40 CFR Part 63, Subpart JJ, including Tables 1 through 6 to Subpart JJ will be attached to the permittee's Title V permit.

Monitoring and Recordkeeping

The Wood Furniture Manufacturing MACT contains requirements for continuous compliance, including monthly and/or daily recordkeeping (depending on the method of compliance) and maintenance of certified product data sheets for each material used and all calculations to demonstrate continuous compliance. These requirements have been incorporated into the permit, as applicable. The Wood Furniture Manufacturing MACT contains adequate monitoring and recordkeeping to meet the periodic monitoring requirements; therefore, no additional monitoring or recordkeeping has been incorporated into the Title V permit.

Testing

The permit does not require source tests for purposes of complying with the Wood Furniture Manufacturing MACT. A table of test methods has been included in the permit if testing is performed. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The Wood Furniture Manufacturing MACT requires that a facility report their compliance status annually, as well as demonstrating continuous compliance semi-annually. These requirements have been included in the permit and will be submitted concurrently with the reports required under the General Conditions section of the Title V permit.

Streamlined Requirements

The initial notification requirements associated with the Wood Furniture Manufacturing MACT/Subpart A--General Provisions have not been included in the permit because Keller has already satisfied this requirement with their submittal of such dated February 5, 1999 (Attachment 3).

Keller indicated that their facility's compliance approach with the Wood Furniture Manufacturing MACT would be the use of compliant coatings, thinners, and/or adhesives. No air pollution control device was proposed as part of the compliance approach. Therefore, for conciseness, the Wood Furniture Manufacturing MACT terms and conditions, identified as potentially applicable only to control devices, have not been included in the Title V permit. The Title V permit does require notification to the DEQ if Keller chooses to install and operate a control device for MACT compliance purposes. Since averaging is still a viable compliance option under the MACT, the Title V includes these provisions in the event that Keller chooses this option. The averaging option would not require the facility to undergo any modification as the addition of a control device would and the requirements (e.g., reporting) are significantly less.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

STATE ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes that have specific requirements only enforceable by the State which have been identified as applicable by the applicant are:

9 VAC 5-40-160 through 9 VAC 5-40-230. Emission Standards For Toxic Pollutants

FUTURE APPLICABLE REQUIREMENTS

Keller did not identify any future applicable requirements in their application. There is a tentative proposal date of June 2001 for a MACT (Subpart DDDDD) covering the Industrial, Commercial and Institutional Boilers and Process Heaters source category. Whenever this MACT is finalized, it may affect the operation of the wood-fired boiler [Unit ID # 21) at this facility. However, currently, the DEQ is not aware of information available to determine the extent of its applicability. The DEQ is also not aware of any other future applicable requirements at this time. Consequently, no future applicable requirements have been included in the permit.

INAPPLICABLE REQUIREMENTS

Keller did not identify any inapplicable requirements in their application. However, in reviewing their application and the air regulations for their Title V permit preparation, the DEQ identified the following regulations that are specifically not applicable to Keller's facility (or portion of it):

40 CFR Part 60, Subpart Dc. Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units: These standards are applicable to each steam generating unit for which construction, modification or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 million Btu per hour or less, but greater than or equal to 10 million Btu per hour. Keller's Keeler Boiler [Unit ID # 21] was constructed in 1966.

9 VAC 5-40-260. Standard for Particulate Matter (AQCR 1-6): This standard is applicable to process operations with a process weight capacity greater than 100 pounds per hour and in general do not apply to affected facilities subject to emission standards in 9 VAC 5 Chapter 40 (among other applicability criteria).

Keller's woodworking operations [Unit ID #'s 17, 18, 19 and 20] are subject to 9 VAC 5 Chapter 40, Article 17, Emission Standards for Woodworking Operations (Rule 4-17). The wood-fired boiler [Unit ID # 21] is subject to Rule 4-8. The facility's wood furniture finishing operations [Unit ID #'s 1 through 16] each have a maximum process weight capacity of approximately 75 pounds per hour.

40 CFR Part 64. Compliance Assurance Monitoring (CAM): The CAM rule applies to a pollutant-specific emissions unit at a major source that is required to obtain a Title V permit and satisfies all of the following criteria:

1. The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof);
2. The unit uses a control device to achieve compliance with any such emission limitation or standard; and
3. The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

The Keeler Boiler [Unit ID # 21] is subject to a particulate matter (PM) emission limitation and uses a multicyclone to achieve compliance with the limit. For this facility, PM_{10} of 100 tons per year results in a Title V major source. Based on the draft (9/99) AP-42 emission factors for wood waste combustion in boilers, the uncontrolled PM emission factor of 0.39 lb/MMBtu for a boiler firing dry wood yields a potential pre-control device hourly PM emissions of 18.6 lbs/hr. The annual pre-control device boiler PM emissions are approximately 81.7 tons based on maximum operation at 8,760 hours per year.

COMPLIANCE PLAN

The compliance plan included with Keller's March 6, 1998 Title V permit application has become obsolete because of resolution. Based on available information, Keller is currently in compliance with all applicable requirements. Therefore, no compliance plan is included in the Title V permit.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units, listed below, are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting has been prescribed in the Title V permit.

The following emission units at the facility are identified in the application as insignificant[1] emission units under 9 VAC 5-80-720:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
K-1	Dry Kiln #1 (#3)	9 VAC 5-80-720 B	VOCs	-
K-2	Dry Kiln #2 (#4)	9 VAC 5-80-720 B	VOCs	-
K-3	Dry Kiln #3 (#5)	9 VAC 5-80-720 B	VOCs	-

K-4	Dry Kiln #4 (#6)	9 VAC 5-80-720 B	VOCs	-
VF-1	Tempering Room Vents	9 VAC 5-80-720 B	VOCs	-

[1]The citation criteria for insignificant activities are as follows:
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

In addition to the operations listed above, Keller also listed the gluing operations in their Title V permit application as an insignificant activity. This operation is covered under the Wood Furniture Manufacturing MACT. Since the operation has applicable requirements under the MACT, it is included as a significant activity in the Title V permit.

CONFIDENTIAL INFORMATION

The permit applicant did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in the April 12, 2001 edition of the *Culpeper Star-Exponent.* The *Culpeper Star-Exponent* is published daily and is the local newspaper of general circulation in the area where Keller is located. Additionally, the information contained in the official public notice was sent to the following persons for the stated purposes:

1. David Mummert, contact for the affected State of Maryland, in accordance with 9 VAC 5-80-290 B.

2. All persons on DEQ's current (February 16, 2001) Mailing List, in accordance with 9 VAC 5-80-270 B.

3. U.S. Environmental Protection Agency - Region III's Dave Campbell for review and comment.

The Title V permit application, the Statement of Legal and Factual Basis, the draft Title V permit and other pertinent information were made available at the DEQ's Fredericksburg Office throughout the entire public comment period from April 12, 2001 through May 14, 2001. During the comment period, there were no comments received from the general public, the affected state of Maryland or the U.S. Environmental Protection Agency (EPA). However, the EPA

provided several recommendations (via electronic mail message dated May 7, 2001 - included as file document) all of which were incorporated in order to clarify and improve the readability of the permit.

ATTACHMENT 1

MINOR NEW SOURCE REVIEW PERMIT
June 24, 1999

ATTACHMENT 2

1999 EMISSION STATEMENT

ATTACHMENT 3

INITIAL COMPLIANCE STATUS REPORT
February 5, 1999